

REDESCRIPTION OF *IPHIPLATEIA WHITELEGGEI*, A NEW GUINEA MARINE AMPHIPOD (CRUSTACEA)

J. Laurens Barnard

Abstract.—*Iphiplateia whiteleggei* is redescribed and its range extended from southeastern Australia to northern New Guinea. As a result of new information, a new key to the genera of the family Phliantidae is presented.

Introduction

This is the last known genus of Phliantidae to be treated in modern time. It has not been seen since the 1890's and is here redescribed from new specimens caught along the shores of New Guinea. The original material came from New South Wales, Australia.

The Phliantidae have been heavily revised in the past decade. In 1969 (see Barnard 1969) the family comprised *Ceina*, *Heterophlias*, *Iphinotus*, *Iphiplateia*, *Palinnotus*, *Pariphinotus*, *Pereionotus*, *Phlias*, *Plioplateia*, *Quasimodia*, and *Temnophlias*. *Ceina* was removed to its own family by J. L. Barnard (1972b); *Palinnotus* was found to be a synonym of *Pereionotus* by Ledoyer (1978); *Plioplateia* was removed to its own family by Barnard (1978a), and *Temnophlias* was removed to its own family by Griffiths (1975). *Gabophlias* was described by Barnard (1972a). *Phlias* has been obscure since its inception, an unfortunate circumstance because it is the type-genus of the family. It and some other genus are probably synonymous. *Pariphinotus* is probably a synonym of *Heterophlias*, thereby leaving only *Gabophlias*, *Heterophlias*, *Iphinotus*, *Iphiplateia*, *Pereionotus*, and *Quasimodia* as valid genera, one of these possibly being junior to *Phlias*.

Heterophlias has been well described by Shoemaker (1933), *Iphinotus* by J. L. Barnard (1972b), and *Quasimodia* by J. L. Barnard (1972a).

A better key to the genera is possible now that *Iphiplateia* is redescribed here. The old application of ramus-peduncle distinctions on uropod 3 seems difficult to use in identification so that the following two keys are based on other characters. Generally the pleon on phliantids is sufficiently transparent that it can be unrolled while mounting the animal dorsal or ventral side down on a slide in mounting medium, and the pleopods can be seen with the high power of a compound microscope, at least sufficiently well to identify the genus without major dissections.

The use of the maxillipedal palp is now poor as certain taxa (*Iphinotus*)

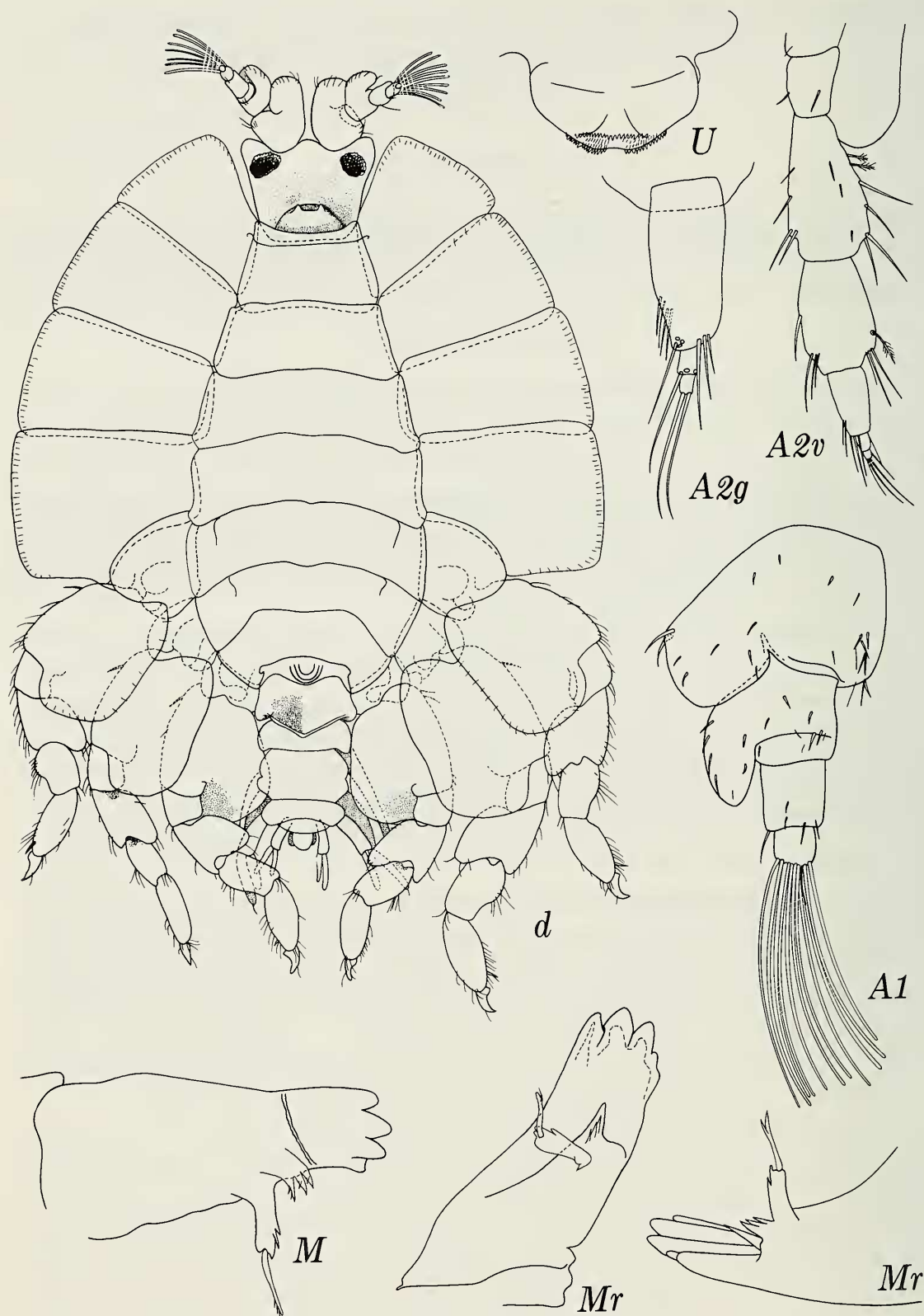


Fig. 1. *Iphiplateia whiteleggei* Stebbing, male "c."

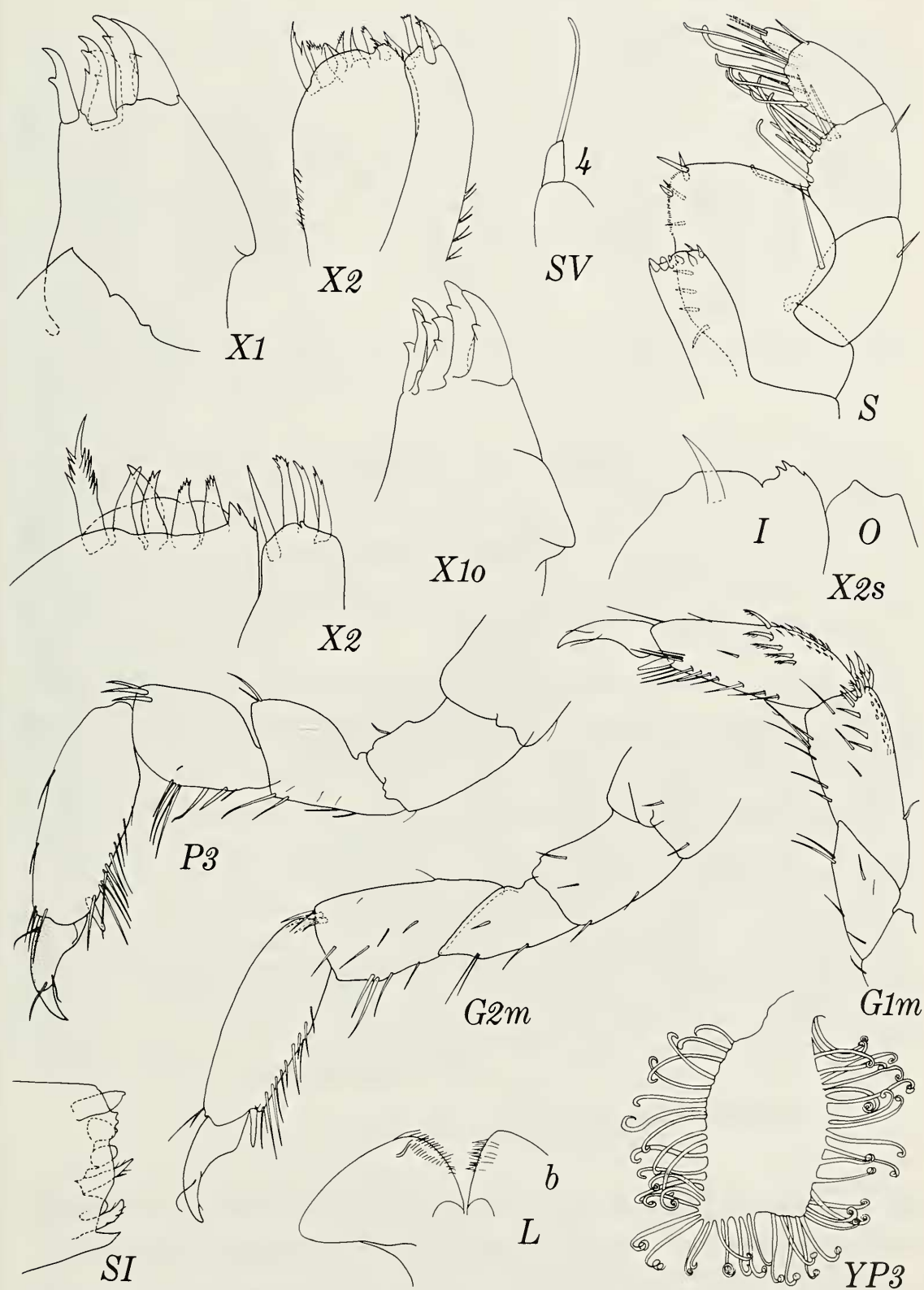


Fig. 2. *Iphiplateia whiteleggei* Stebbing, male "c."

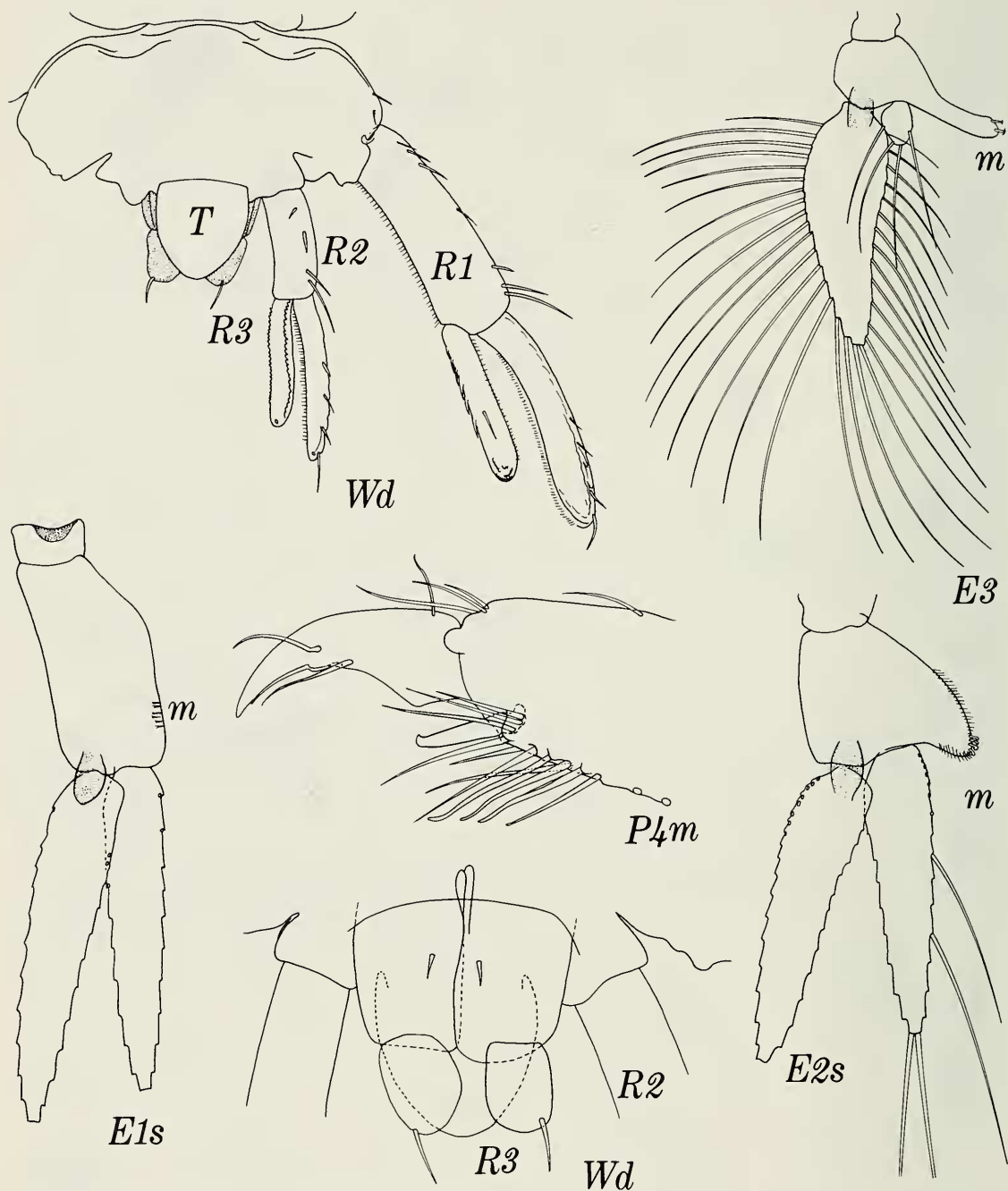


Fig. 3. *Iphiplateia whiteleggei*, male "c."

have variable numbers of palpar articles. Only the female of *Pereionotus* lacks one ramus on uropod 2 so that the keys have avoided that pitfall.

Drawings of the obscure *Phlias serratus* Guérin (1836) are here represented in Fig. 4; they have been photographed and reinked from the original; the taxon was collected on a voyage between New South Wales and the Falkland Islands so the origin of the species remains obscure.

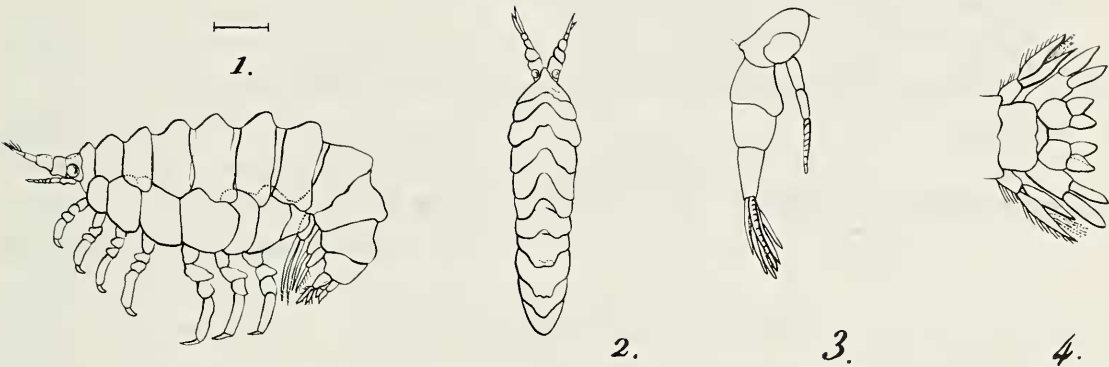


Fig. 4. *Phlias serratus* Guérin; enlargement, rearrangement, and reinking of Guérin's (1836) original drawings including his figure numbers.

One may run it through the key presented herein but find no place for its characteristics; Guérin drew the third pleopod thinking it to be uropod 1, not noticing that uropod 3 was vestigial and hidden under the telson. If he used simply a representational pleopod then the drawing is erroneous; if, indeed it lacks a medial extension of the peduncle and elongate inner ramus as shown then it is quite unique within Phliantidae in combination with its other characteristics.

The dorsal body outline appears much too lumpy to be *Iphiplateia*; *Heterophlias* has never been recorded from the southern hemisphere; pleopod 3 is wrong for all the remaining genera but the body generally looks like *Palinnotus*(=*Pereionotus*). The species therefore may be *Pereionotus thomsoni* (Stebbing) but comparison of Guérin's drawings and those in Barnard (1972a, figures 176–179) leaves many questions unanswered.

Legends: Capital letters describe morphological parts; lower case letters to right of capital letters describe modifications, as follows: A, antenna; B, brood plates of female "h"; G, gnathopod; E, pleopod; I, inner plate or ramus; L, lower lip; M, mandible; O, outer plate or ramus; P, pereopod; R, uropod; S, maxilliped; T, telson; U, upper lip; V, palp; W, urosome; X, maxilla; Y, gill; b, broken; d, dorsal; g, enlarged; m, medial; o, opposite; r, right; s, setae removed; v, ventral.

Key I to the Genera of Phliantidae

- 1. Article 2 of pereopod 7 ovate *Iphiplateia*
 - Article 2 of pereopod 7 quadrate 2
- 2. Article 2 of pereopod 6 quadrate
 - *Heterophlias* (= *Pariphinotus*)
 - Article 2 of pereopod 6 ovate 3
- 3. Inner ramus of pleopod 3 greatly shortened 4
 - Inner ramus of pleopod 3 about as long as outer ramus. 5

- 4. Pereopods prehensile, body very tall *Quasimodia*
- Pereopods simple, body very flat *Gabophlias*
- 5. Peduncles of all pleopods strongly produced medially, molar stubby, with nail *Iphinotus*
- Peduncle of pleopod 1 unproduced, of pleopod 2 weakly produced, of pleopod 3 strongly produced, molar spike-like *Pereionotus* (= *Palinnotus*)

Key II Genera of Phliantidae

- 1. Inner ramus of pleopod 3 unshortened Key I, couplet 5
- Inner ramus of pleopod 3 shortened 2
- 2. Article 2 of pereopod 6 quadrate *Heterophlias* (= *Pariphinotus*)
- Article 2 of pereopod 6 ovate 3
- 3. Article 2 of pereopod 7 ovate *Iphiplateia*
- Article 2 of pereopod 7 quadrate Key I, couplet 4

Iphiplateia Stebbing

Iphiplateia Stebbing, 1899:414 (*Iphiplateia whiteleggei* Stebbing, 1899, monotypy).—Stebbing, 1906:203.

Molar cylindrical or box-like, with apical nail. Article 2 of pereopods 5–7 all ovate, alike; pereopods simple. Peduncles of pleopods diverse, pleopod 1 with rectangular peduncle, pleopod 3 with immensely produced peduncle, pleopod 2 transitional; rami of pleopods 1–2 elongate, inner ramus of pleopod 3 very short.

Iphiplateia whiteleggei Stebbing

Figs. 1–3

Iphiplateia whiteleggei Stebbing, 1899:415–416, plate 34; 1906:203–204, figs. 52, 53.

Original description and illustrations excellent; reillustrated herein, figures self-explanatory; following remarks concern only figure problems or unillustrated aspects:

Body extremely flat, coxae pointing almost completely laterad, segments with only 3 dorsal humps, one each on pereonites 1, 7 and pleonite 1, the last forming keel, humps diminished or absent in juveniles, but hump near back of head part of pereonite 1 in male “c” with 2 anterodorsal nipples, these absent in other specimens; urosomites 2–3 and base of telson all fused together or very dimly partitioned. Epistome flat in front. Right mandible with spine like lacinia mobilis distinct from 3 fused spines of spine row but left lacinia mobilis absent.

Gnathopod 2 and pereopods 3–7 with article 6 alike medially, only gnathopod 1 with extra subapical row of prickled spines.

Gills sausage shaped, on coxae 2–6, becoming smaller posteriorly, that on coxa 6 scarcely larger than male penial process of sternite 7; brood plates broad, very small, perhaps no mature females present.

Inner ramus of pleopod 3 setose; pleopod 1 with multiple coupling hooks, pleopod 2 with 4–5, pleopod 3 with 2–3.

Material.—Madang, New Guinea, 31 July 1980, scrapings from reef rubble in shallow water, coll. C. A. Child, Jr., J. L. Barnard, and C. M. Barnard; male “c” 3.23 mm (illustrated), female “h” 2.92 mm (brood plate illustrated), juvenile “r” 1.88 mm, juvenile “z” 1.86 mm, and 4 other adults; USNM 184222.

Remarks.—Differing from *I. orientalis* Tzvetkova (1976, Japan Sea) in the presence of 5 or 6 elements (versus 2) on the outer plate of maxilla 2 and the distinctly larger and setose inner ramus of pleopod 3; one assumes Stebbing might have missed these setae in the original Australian material of *I. whiteleggei*.

Distribution.—Sydney, New South Wales, to northern New Guinea, intertidal or shallow water.

Acknowledgments

I thank C. Allen Child, Jr., Deborah R. Feher (illustrator), Janice Clark, Margaret S. Cairns, Deborah Bernsdorf, and Elizabeth B. Harrison for assistance. S. Dillon Ripley, Secretary of the Smithsonian Institution, provided the funds for our field work in New Guinea, for which we are most grateful.

Literature Cited

- Barnard, J. L. 1969. The families and genera of marine gammaridean Amphipoda.—United States National Museum, Bulletin 271:1–535, figures 1–173.
- . 1972a. The marine fauna of New Zealand: Algae-living littoral Gammaridea (Crustacea Amphipoda).—New Zealand Oceanographic Institute, Memoir 62:7–216, figures 1–109.
- . 1972b. Gammaridean Amphipoda of Australia. Part I.—Smithsonian Contributions to Zoology 103:1–333, figures 1–194.
- . 1978. Redescription of *Plioplateia* K. H. Barnard, a genus of amphipod from South Africa.—Annals of the South African Museum 77:47–55, figures 1–4.
- Griffiths, C. 1975. The Amphipoda of Southern Africa Part 5.—Annals of the South African Museum 67:91–181, figures 1–21.
- Guérin, F.-E. 1836. Description de quelques genres nouveaux crustacés appartenant à la famille des hypérines.—Magazin de Zoologie Journal, Anno 6, Cl. 7:1–10, + 2 unnumbered pages, plates 17–19.
- Ledoyer, M. 1978. Amphipoden Gammariens (Crustacea) des biotopes cavitaires organogènes récifaux de l'île Maurice (Ocean Indien).—The Mauritius Institute Bulletin 8:197–332, figures 1–43.
- Shoemaker, C. R. 1933. Two new genera and six new species of Amphipoda from Tortugas.—

Papers of the Tortugas Laboratory, Carnegie Institution of Washington 28:245–256, figures 1–8 (Publication 435).

Stebbing, T. R. R. 1899. Amphipoda from the Copehagen Museum and other sources, Part II.—Transactions of the Linnean Society of London, series 2, Zoology 7:395–432, plates 30–35.

Department of Invertebrate Zoology, Smithsonian Institution, Washington, D.C. 20560.